

PATENT CLAIMS:

1. An apparatus for portion cutting of products, such as food products (1), said apparatus comprising
 - 5 cutting means (2) for sectioning the products (1);
 - scanning means (6) for detecting at least one characteristic of the product;
 - conveying means (4) for transporting the product from the scanning means to the cutting means, and
 - control means for controlling and regulating at least one relevant cutting process
 - 10 parameters in order to achieve predetermined product portions based on the detected product characteristics,
- characterised in that
 - 15 the conveying means comprises at least one conveyor unit (4) having two substantially parallel conveyors (4a; 4b) each having an upper conveying surface, said upper conveying surfaces being inclined relative to each other, so that the conveying surfaces of the conveyors have a mutual angle different from 180° in a traverse direction of the conveying direction.
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 2. An apparatus according to claim 1, wherein the conveying means (3, 4, 5) comprises a first conveyor unit (3) for receiving the products and downstream of the first conveyor unit (3) a second conveyor unit (4) which takes the products to the cutting means (2) and a third conveyor unit (5) which transports the sectioned products away from the cutting means (2).
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 3. An apparatus according to claim 2, wherein the first conveyor unit (3) also comprises two parallel mutually inclined conveyors (3a, 3b).
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 4. An apparatus according to claim 2 or 3, wherein the third conveyor unit (5) also comprises two parallel mutually inclined conveyors (5a, 5b).

5. An apparatus according to claim 3 or 4, wherein the parallel conveyors (3a, 3b; 4a, 4b; 5a, 5b) of the conveyor units (3, 4, 5) are arranged with the same mutual inclination in each of the conveyor units (3, 4, 5).
10. 6. An apparatus according to any of claims 2 to 5, wherein the scanning means (6) are arranged between the first and the second conveyor units (3, 4).
15. 7. An apparatus according to claim 6, wherein the scanning means (6) includes a scanner adapted to perform a 360° scanning of the products.
15. 8. An apparatus according to any of the preceding claims, wherein the two mutually inclined pair of conveyors (3a, 3b; 4a, 4b; 5a, 5b) of the conveyor unit (4) or units (3, 4, 5) are both inclined with the same angle relative to horizontal forming a V-shaped conveyor configuration.
20. 9. An apparatus according to claim 8, wherein the angle of inclination of the pairs of conveyors (3a, 3b; 4a, 4b; 5a, 5b) is adjustable, preferably between 0° to 40° relative to horizontal, so that a V-form with a mutual angle of the upper conveyor surfaces is preferably between 100° to 180°.
25. 10. An apparatus according to any of the preceding claims, wherein the angle of inclination is automatically adjustable.
25. 11. An apparatus according to any of the preceding claims, wherein the angles of inclination of all the conveyor units are substantially the same.
30. 12. An apparatus according to any of the preceding claims, wherein common drive means are provided for driving the pair of mutually inclined conveyors (3a, 3b; 4a, 4b; 5a, 5b) with the same conveying velocity.

13. An apparatus according to any of the preceding claims, wherein each of the conveyors is provided with an elastic conveyor belt having an inclined upper conveying surface over a support structure and a lower run where the belt is turned to a horizontal configuration where the belt is engaged by the drive means.

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14. An apparatus according to claim 13, wherein said drive means including a drive roller with engagement pins cooperating with traction holes in the conveyor belt; said conveyor belt being held in tension support rollers by leading the belt in a loop run over the drive roller.

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15. An apparatus according to claim 13 or 14, wherein the drive rollers of the adjacent two conveyors in a conveyor unit are arranged on a common drive shaft.

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16. An apparatus according to any of the preceding claims, wherein the control means is adapted to regulate the conveyor velocity of the conveyor unit (4) and the rate of the cutting means in response to a computation of the input of the scanning means and predetermined portion type information.

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17. An apparatus according to any of the preceding claims, wherein the cutting means (2) includes a rotating knife (10) that is positioned to cutting the products (1) between the second and third conveyor units (4, 5).